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ABSTRACT

This brief paper outlines a suggested format for incorporating multimedia presentations into teaching preparation courses in special education. It notes that novices and intermediate users can get started using multimedia presentations with minimal office computer equipment. Specific hypermedia and presentation software programs are identified. The paper lists eight steps in developing a multimedia presentation: (1) "storyboarding" of general ideas; (2) preliminary development using a multimedia authoring program; (3) gathering and saving media in digitized format; (4) revising the multimedia program; (5) developing a media disc on CD-ROM; (6) re-revising the multimedia program; (7) testing the program for "crashes"; and (8) field testing and presentation. (Contains 13 references.) (DB)

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Getting started with multimedia

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Practice what you preach: Integrating technology into your instruction
Getting started with multimedia

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Developing low cost multimedia projects can be fun and exciting. New developments in computer technology, the proliferation of CD-ROM's, and the availability of user friendly programs have brought to the development of multi-media presentations what word processors once brought to the skill of typing. Multimedia presentations are no longer the exclusive territory of computer programmers. Anyone, students and teachers alike, can pick up the essential skills in a few hours. As teacher educators, if we are to encourage the use of this technology, then we must also model it, finding new ways to re-purpose our own ideas and present them in novel ways. This paper outlines a suggested format for incorporating multimedia presentations into teacher preparation courses in special education.

Where to go for ideas and support

Fascinating examples of the power of multimedia in education can be found within the documentation of software programs. Hyperstudio (Wagner, 1996) provides a CD-ROM showcasing student and teacher's work. Intellipics (Intellitools, 1996) offers start-up activities on disc and easy to follow directions for creating multi-media for children. Intellitools also offers multiple adaptations for very young children and children with disabilities through overlays and on screen scanning programs.

An excellent primer on a variety of mulitmedia applications (with an accompanying CD-ROM) is offered by Robinette (1995). Consultants from the Center for Applied Assistive Technology (Stahl, personal communication, 1996) provide training and other assistance in incorporating multimedia as a way to make curriculum accessible to all students. These sources all seek to inspire as well as inform in the use of multimedia.

Using multimedia programs in teacher education classes is an excellent way to "anchor" (Moore, Reith, and Ebeling, 1993) images for the students, providing a visual common ground. The following process outlines the steps in a typical presentation's development. This process has been used to develop multimedia demonstrations on the use of assistive technology for preservice and practicing special education teachers (Puckett and Littleton, 1996) and for training in multidisciplinary team development (Brown and Puckett, 1996.)

Equipment

It is possible to get started using multimedia presentations with minimal equipment. Novices and intermediate users will find adequate hardware support with typical office computers. For the majority of my own work, I use a Macintosh with system 7.1 or higher, 16 MB RAM and a CD Rom player. Similar configurations are possible on the DOS platform. If your plans include the use of original, classroom based video clips converted to quick time (Puckett and Littleton, 1996), a few other pieces of equipment are necessary, such as a video camera designed for home use, a Macintosh equipped with a Rasterops Media Time board, a VCR, and two monitors to aid in movie clip editing. If hard drive space is a problem, (video files can become quite large), consider using a removable hard drive such as a Syquest or Zip. Video files can be permanently stored on a recordable CD-ROM by using CD writer equipment (JVC).

Software: Hyperstudio is an inexpensive multimedia authoring program that is easy for teachers and students alike to learn. Astound is a more sophisticated authoring program, slightly more difficult to learn, but with some interesting features. Intellipics offers more limited multimedia choices, but has adaptations for children with physically disabilities which are easy to learn and

implement. To capture and edit short clips of video and transfer them to a quick time movie format, Premier (version 4.2) is easy to use and does and excellent job.

Presentation programs, such as PowerPoint and Persuasion, are especially adaptable for use in college courses. They offer multimedia advantages such as incorporating sound, pictures, movies, and charts. One excellent time saving feature is the outline format, which allows input of the content from a single screen. The user can choose from pre-existing templates which automatically enter data from the outline to each slide. The disadvantage of presentation programs is that the normal progression is in a linear fashion. Jumping to slides which are not in order is possible but awkward.

Steps in developing a multimedia presentation

The following procedures, offered by Puckett and Littleton (1996) are ordered in a linear fashion. These steps are actually recursive, with revision occurring at all levels of development.

1. **"Storyboard" general ideas**

   Develop a sketch of preliminary topics and a list of types of video to gather. Sketch ideas on index cards and order them to obtain a general idea of the sequence. Plan the scenarios that need to be recorded and obtain appropriate permissions if recording individual students.

   One advantage of developing multimedia presentations is the flexibility of this initial step. One can do as much or as little preplanning as needed to accommodate individual working styles. Some people start with a blank screen and begin creating, others sketch out every detail. My own personal preference is to begin with a very rough idea and begin designing "cards" or "screens" directly in the program. This style, for me, is analogous to writing using a word processor. I enter a rough outline and then compose the rest of my thoughts as I type.

   In multimedia, any screen can be edited at any time, but it is helpful to begin with some form of plan, however detailed it may or may not be.

2. **Preliminary development using a Multimedia Authoring Program**

   Develop the initial program structure, home or opening screens and links to other screens or programs. Decide on background details, the size of buttons or other links, and general format. Copy several of these screens before any data is entered. They can then be used as a template for subsequent work.

3. **Gather media and save in digitized format.**

   Video tape in classrooms, take pictures, or use a quick take camera. On the MAC, a screen shot (shift-apple-3) is an easy way to incorporate pictures from other programs or downloaded from the INTERNET into multimedia programs.

   If the media isn't already in a digitized format, it must be converted in order to be used by multimedia programs. Edit and convert video to quick time movies by using Premier or a similar video capture program (refer to equipment and software above). Pictures can be scanned and digitized using software which comes with the scanner. If space is at a premium, save all work to a temporary storage source (such as Syquest). Pictures and quick time movies can be very large files.

4. **Revise Multimedia program**

   Once the media is in a digitized format, revise the multimedia program, incorporating pictures and movies where desired.

5. **Develop media disc on CD-Rom**

   If hard drive space is not an issue, or if removable hard drive space is adequate, then skip this step. However, you may wish to consider recording the media to a CD

ROM, which offers a permanent, convenient, and portable storage source for the digitized media. A CD ROM can hold over 600 megabytes of data.

CD writers have dropped in price, making recording your own CD a practical method of storing or sharing data. Most writers have either WORM drives (write once, ready many) or are re-recordable. If using a WORM drive, the recording is permanent and cannot be revised. A flexible option is to record the media to the CD, and keep the program which accesses it on disc or the computer's hard drive. The program can then be revised as needed.

The directions which come with most CD writers and their accompanying software are generally easy to follow. Stern and Lettieri (1996) offer valuable ideas for processing quick time movies and recording to CD to insure optimal performance.

6. Re-revise Multi-media program

Revise the all buttons and other links which pull up video clips and pictures to read the name of the CD (referred to as the volume) as well as the appropriate file names listed within the CD.

7. Test

Test the program for "crashes" and revise as necessary.

8. Field test and present.

Field test program with preliminary audiences before taking it "on the road." Experiment with various projection sources: full motion projection panels used with overhead projectors, projection on TV screens with scan converters, and other projection devices. With smaller audiences, a computer monitor screen is more than adequate. Feedback obtained at this level will help to revise for more formal presentations.

Summary and Final Comments

Using multimedia presentations in teacher preparation courses has many benefits. Multimedia presentations add interest, provide a model of using technology, and even help organize lectures! Once modeled, it becomes easier to ask students to develop and use multimedia in their own projects, subsequently influencing the students who will one day be in their charge.

My recommendations for getting started are to begin with simple projects and use what is readily available or modifiable. The latest equipment and fancy labs are not crucial to initial projects. Many programs, such as Hyper studio and Powerpoint, are bundled and loaded on new computers that are purchased.

Don't be afraid to experiment. Developing, revising, and crashing are all part of the learning curve.

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